In the Claims

Claim 1 (original): A method of forming a material over a substrate comprising utilization of at least one iteration an ALD-type pulse sequence of M_1-M_2-R, where M_1 is a first metal-containing precursor comprising a first metal, M_2 is a second metal-containing precursor comprising a second metal different from the first metal, and R is a reactant which reacts with one or both of the first and second metals.

Claims 2-9 (canceled).

Claim 10 (withdrawn): The method of claim 1 wherein:

the first metal is hafnium,

the second metal is aluminum,

M_1 is tetrakis-methylethylamido hafnium (TMEAH), and

M_2 is trimethyl aluminum (TMA).

Claim 11 (withdrawn): The method of claim 1 wherein:

the first metal is hafnium,

the second metal is aluminum,

M_1 is tetrakis-dimethylamino hafnium (TDMAH), and

M_2 is trimethyl aluminum (TMA).

Claim 12 (original): The method of claim 1 wherein:

the first metal is aluminum,

the second metal is hafnium,

M_1 is trimethyl aluminum (TMA), and

M_2 is tetrakis-methylethylamido hafnium (TMEAH).

Claim 13 (original): The method of claim 1 wherein:

the first metal is aluminum,

the second metal is hafnium,

M_1 is trimethyl aluminum (TMA), and

M_2 is tetrakis-dimethylamino hafnium (TDMAH).

Claim 14 (original): The method of claim 1 wherein:

the first metal is aluminum,

the second metal is hafnium,

R is ozone (O_3),

M_1 is trimethyl aluminum (TMA),

M_2 is tetrakis-methylethylamido hafnium (TMEAH), and

and the pulse sequence is TMA-(TMEAH-O_3)x, where x is an integer greater than zero.

Claim 15 (original): The method of claim 1 wherein:

the first metal is aluminum,

the second metal is hafnium,

R is ozone (O_3),

M_1 is trimethyl aluminum (TMA),

M_2 is tetrakis-dimethylamino hafnium (TDMAH), and

and the pulse sequence is TMA-(TDMAH-O_3)x, where x is an integer greater than zero.

Claims 16-19 (canceled).

Claim 20 (original): A method of forming a material over a substrate, comprising:

placing the substrate within a reaction chamber and, while the substrate is within the chamber, performing at least one iteration of the following sequence:

providing a first precursor within the reaction chamber and chemisorbing a first species from the first precursor onto the substrate;

removing substantially all of the first precursor from within the reaction chamber;

providing a second precursor within the reaction chamber and sorbing a second species from the second precursor in contact with the first species, the second precursor having a different composition than the first precursor;

removing substantially all of the second precursor from within the reaction chamber;

providing a reactant within the reaction chamber and reacting said reactant with at least one of the first and second species; and

removing substantially all of the reactant from within the reaction chamber.

Claim 21 (original): The method of claim 20 wherein at least one of the first and second species does not comprise metal.

Claims 22 and 23 (canceled).

Claim 24 (withdrawn): The method of claim 20 wherein one of the first and second species comprises Si and the other comprises Ge.

Claim 25 (canceled).

Claim 26 (original): The method of claim 20 wherein one of the first and second species comprises hafnium and the other of the first and second species comprises aluminum.

Claim 27 (withdrawn): The method of claim 20 wherein one of the first and second species comprises titanium and the other of the first and second species comprises aluminum.

Claim 28 (original): The method of claim 20 wherein the first precursor is trimethyl aluminum and the second precursor is tetrakis methylethylamido hafnium.

Claims 29 and 30 (canceled).

Claim 31 (withdrawn): The method of claim 28 wherein the first species comprises aluminum, the second species comprises hafnium, the reactant comprises nitrogen, and the reacting forms aluminum nitride and hafnium nitride.

Claim 32 (canceled).

Claim 33 (withdrawn): The method of claim 28 wherein the first species comprises aluminum, the second species comprises hafnium, the reactant comprises silicon, and the reacting forms aluminum silicide and hafnium silicide.

Claims 34-49 (canceled).

Claim 50 (original): A method of forming a material over a substrate, comprising:

placing the substrate within a chamber; and

while the substrate is within the chamber, performing at least one iteration of a sequence consisting of the following steps:

providing two or more different metal-containing precursors within the chamber at different and substantially non-overlapping times relative to one another to form a material over the substrate that comprises metals from said two or more precursors, at least two of the metals being different from one another; and

exposing the material to one or more reactants, at least one of said reactants interacting with at least one of the of the metals to change the composition of the material.

Claim 51 (canceled).

Claim 52 (original): The method of claim 50 wherein one of said at least two metals is hafnium and another of said at least two metals is aluminum.

Claim 53 (withdrawn): The method of claim 52 wherein the hafnium is provided before the aluminum.

Claim 54 (original): The method of claim 52 wherein the aluminum is provided before the hafnium.

Claims 55-65 (canceled).

Claim 66 (original): A method of forming a material over a substrate, comprising:

placing the substrate within a reaction chamber and, while the substrate is within the chamber, performing at least one iteration of the following sequence:

providing a first precursor within the reaction chamber and depositing a first component of the material from the first precursor, the first component comprising a first metal and forming a substantially saturated monolayer over the substrate;

removing substantially all of the first precursor from within the reaction chamber;

providing a second precursor within the reaction chamber and depositing a second component of the material from the second precursor, the second component comprising a second metal different from the first metal, the second component integrating with the substantially saturated monolayer of the first component;

removing substantially all of the second precursor from within the reaction chamber; and

exposing the material comprising the first and second components to one or more reactants, at least one of said reactants interacting with at least one of the of the first and second components to change the composition of the material.

Claim 67 (original): The method of claim 66 wherein at least one of the first and second metals is selected from the group consisting of aluminum, hafnium, lanthanides, niobium, tantalum, titanium, yttrium and zirconium.

Claims 68-86 (canceled).